

by U.S. patent No 5,643,350 to Mason; and claims 9, 12 and 14 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent No 5,548,611 to Cusick.

By this Response and Amendment:

claims 1-15 are amended according to the Examiner's suggestions, and to overcome their objections and their rejections under 35 U.S.C. 112, second paragraph;

claims 16 is submitted to claim limitations that were present in the originally filed claim 1, but which were removed from claims 1 by the present amendment;

the paragraph of the specification at page 10, lines 12-19, is amended to correct a typographical error, namely to correct reference numeral "61" which was mistakenly spelled "16", thereby obviating the objection to the drawings under 37 CFR 1.84(p)(5);

the provisional obviousness-type double patenting rejections of claims 1-15 are traversed; and

the rejections of claims 9, 10, 12, 14 and 15 under 35 U.S.C. 102(b) are traversed.

It is respectfully submitted that the above amendments and additions do not introduce any new matter to this application within the meaning of 35 U.S.C. § 132, or any narrowing of any element of the claims. In particular, support for newly submitted claims 16-17 is found in claim 1 as originally filed.

Objections to the Drawings

The drawings were objected to by the Examiner under

1.84(p)(5) as follows:

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 16. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 61. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Response

The specification has been amended to correct a typographical error by replacing the reference numeral "16" on page 10, line 14 with the reference numeral "61" which is shown in the drawings, thereby obviating the objections to the drawings.

Accordingly, reconsideration and withdrawal of the objections are respectfully requested.

RECEIVED
JUN 19 2003
TC 1700
CFR

**Rejections under 35 U.S.C. § 112, second paragraph,
Objections to the Claims, and Examiner's Suggestions**

RECEIVED
JUN 19 2003
TC 1700

The Examiner rejected claims 1, 3-5 and 9-11 under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 3, 4 and 12 were objected to because of informalities, and the Examiner suggested changes to claims 1-6 and 9-15.

Response

Claims 1, 3-5 and 9-11 have been amended to overcome their rejections under 35 U.S.C. 112, second paragraph.

In particular, in claims 1 and 9 the words "they" and "their" have been replaced with the positive recitation of the elements that these words stand for. Claim 1 has been amended to cure the lack of antecedent basis of the limitation "the oxygen-containing gas". Also in claim 1, the limitation which followed and was introduced by the term "advantageously" has been deleted and is now claimed in newly submitted claims 16-17, which depend from claim 1.

In claims 3 and 4 the recitations "it" and "its" have been replaced by the positive recitation of the elements that these words stood for. Claim 3 has also been amended to cure the lack of antecedent basis of the phrases "walls" and "double-walled type".

Also in claim 4, the recitation "device (5) for feeding" has been replaced with --feeding device--, which is introduced in claim 3, thereby correcting the lack of antecedent basis; and claim 4 has

been amended to cure the lack of antecedent basis of the limitations "heat transferred" and "incoming waste"

Claim 5 has been amended to cure the lack of antecedent basis of the limitation "means (5,6)".

In claims 6 and 7, the word "it" has been replaced by the positive recitation of the element that this word stood for, i.e. respectively, "said method" and "said waste".

Claims 9, 10 and 11 have been amended to cure the lack of antecedent basis of the word "gas".

Claim 12 has been amended to make it grammatically pleasant and easier to understand. In particular, the language "the means introduced into said reactor (1), other than said means (8) for injecting said oxygen or said gas into said bath of molten glass (V), including..." has been deleted.

Additionally, all parentheses, and letters and numbers contained therein have been deleted as suggested by the Examiner.

For the foregoing reasons, it is respectfully submitted that amended claims 1-15 and newly submitted claims 16-17 are in compliance with section 112; and that all Examiner's objections have been overcome. Accordingly, reconsideration and withdrawal of the rejections and objections are respectfully requested.

**Provisional rejections of claims 1-15 under the judicially
created doctrine of obviousness-type double patenting**

The Examiner provisionally rejected claims 1-15 under the judicially created doctrine of obviousness-type double patenting as being obvious over claims 1-22 of Applicants' copending U.S. patent application No. 09/856,685, now U.S. patent No. 6,576,807.

Response

Applicants respectfully traverse the provisional rejections.

Any obviousness-type double patenting rejection should make clear: (A) the differences between the inventions defined by the conflicting claims, and (B) the reasons why a person of ordinary skill in the art would conclude that the claim in issue is an obvious variation of the claim in the patent or second application (MPEP § 804, paragraph II.B.1). Further, the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966), for determining obviousness under 35 U.S.C. § 103 should be employed when making an obviousness-type double patenting rejection (*In re Braat*, 937 F.2d 589, 19 U.S.P.Q.2d 1289, 1292 (Fed. Cir. 1991); MPEP § 804, paragraph II.B.1).

The Office Action fails to discuss the differences between the purportedly conflicting claims, and the reasons for concluding that the present claims are obvious variations of claims 1-22 of the '685 patent application.

Without waiving the aforementioned deficiencies, Applicants respectfully traverse the double patenting rejection over the '685 patent application on the ground that the instant claims are patentably distinct.

An obviousness-type double patenting rejection is improper where the application claims are patentably distinct from the prior patent claims.

Claims 1-22 of the '685 patent application claim a method and an apparatus for incinerating and vitrifying organic waste in solid and/or liquid form in a single reactor containing a bath of molten glass surmounted by a gas phase. The method comprises **introducing said waste into the reactor with associated dual cooling**, incinerating said waste in presence of oxygen at the surface of the bath, and vitrifying said waste in the bath. Oxygen is delivered as an oxidizer into the gas phase and also advantageously injected into the bath of molten glass to substantially reduce metal forming in the bath and even to impart moderate stirring of the bath.

By contrast, independent claims 1 and 9 of the present application claim respectively a method and a device for incinerating waste in presence of oxygen, wherein the oxygen injected into the bath of molten glass (in addition to the oxygen delivered as oxidizer into the gas phase) is injected by **injection means being cooled and arranged in such a manner that on ceasing injection they do not form a plug of glass at their open end.**

The '685 patent application does not claim that the injection means do not form a plug of glass at their open end as claimed in the present application. Further, there is no teaching or suggestion in the claims of the '685 patent application which would lead one of ordinary skill in the art to conclude that the present claims are an obvious variation of the claims of the '685 patent application. Thus, the present claims are non-obvious over, and patentably distinct from, claims 1-22 of U.S. Patent Application No. 09/856,685.

Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the provisional rejections of claims 1-15.

Rejections under 35 U.S.C. 102(b)

The Examiner rejected claims 9, 10, 12, 14 and 15 as follows:

Claims 9, 10, 12, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Mason '350.

Mason '350 teaches in column 4 to column 9 an apparatus for processing organic waste by incineration and vitrification including a heater means, a means for emptying the bath of glass, a device for feeding the waste opening above the bath of glass, a combustion gas outlet, and an oxygen injection port. Column 8, lines 5-6 teach the oxygen inlet port is equipped with a water cooling sleeve. Figure 2 shows the oxygen can be delivered below the bath of molten glass. Column 9, lines 40-50 teach a double walled reactor, where cooling fluid circulates between the walls. It also appears that the reactor is inherently a cold crucible and column 8, line 46 teaches induction coils for heating.

Claims 9, 12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Cusick '611.

Cusick '611 teaches in column 8 through column 12 an apparatus for processing organic waste by incineration and vitrification including a heater means, a means for

emptying the bath of glass, a device for feeding the waste opening above the bath of glass, a combustion gas outlet, and an oxygen or air injection port. Column 9, lines 47-58 teach the oxygen or air injection port is water cooled. Figure 2 and column 9, lines 17-21 teach the reactor has a water cooled jacket and thus would have two walls.

Response

Applicants respectfully traverses the rejections. The test for anticipation under section 102 is whether each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP §2131. The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

The present invention as claimed in independent claim 9 is directed to an apparatus for processing organic waste by incineration and vitrification. The apparatus comprises a reactor associated with heater means which maintain a bath of molten glass in a bottom portion of the reactor; a feeding device for feeding the waste to be incinerated and vitrified having an opening above a surface of the bath of molten glass; means for feeding an oxidizer (oxygen or oxygen-containing gas) above the surface of the bath;

and is **further equipped with injection means for injecting the oxygen or oxygen-containing gas into the bath of molten glass.** As claimed in claim 9, an essential feature of the invention is that these injection means have a structure including at least one circuit for circulating a cooling fluid therein, and are arranged in such a manner that they **do not form a plug of glass at their open end** when they cease to be fed.

In contrast, both references cited by the Examiner disclose **only one oxygen injection means** associated with the incineration device. Mason et al. discloses at col. 7, lines 66-67: "In an alternative embodiment shown in FIG. 2, melter 20 is configured with a retractable oxygen lance 150." Cusick et al. discloses at col. 9, lines 48-58: "[...] a water-cooled tube 72 is provide for injecting air, oxygen or steam into the plasma arc furnace 20. The water-cooled tube 72 extends down through the exhaust stack 58 and is located along the longitudinal axis of the melter shell 22.[...]"

It is submitted that neither Mason et al. nor Cusick et al. teach a reactor further equipped with injection means for injecting oxygen or oxygen-containing gas into the bath of molten glass, separate from the means for providing the oxidizer in the gas phase above the surface of the bath of molten glass. Furthermore, it is submitted that neither Mason et al. nor Cusick et al. teach injection means arranged in such a manner that on ceasing to be fed they do not form a plug of glass at their open end.

For the foregoing reasons it is submitted that independent claim 9 is patentable over both applied references. Consequently, claims 10, 12, 14 and 15, each ultimately depending from claim 9, are also asserted to be patentable over the cited prior art for at least the same reasons that independent claim 9 is patentable thereover.

Accordingly, reconsideration and withdrawal of the rejections is respectfully requested.

MISCELLANEOUS

Additionally, the references cited by the Examiner have been reviewed and it is submitted that the claims as originally presented and as herein resubmitted and the newly submitted claim are patentable thereover.

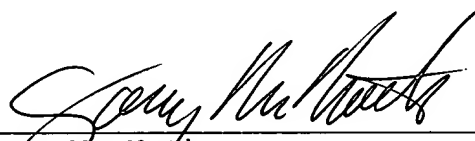
CONCLUSION

In light of the foregoing, Applicant submits that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

Respectfully submitted,

NATH & ASSOCIATES PLLC

By:



Gary M. Nath
Registration No. 26,965
Customer No. 20529

Date: June 17, 2003
NATH & ASSOCIATES PLLC
1030 Fifteenth Street, N.W.
Sixth Floor
Washington, DC 20005
(202) 775-8383